

CLAIMS AS FILED - BASF/NAE 1032/99

1. A solid composition comprising
 - (A) at least one solid (meth)acrylate copolymer with a number-average molecular weight of from 850 to 10 000 and a molecular weight polydispersity M_w/M_n of from 1.0 to 5.0, containing at least one group (a) having at least one bond which can be activated with actinic radiation;
and
 - (B) at least one solid compound comprising a parent structure and, attached thereto, on average per molecule more than one group (a) having at least one bond which can be activated with actinic radiation.
2. The solid composition as claimed in claim 1, characterized in that the (meth)acrylate copolymer
 - (A) is preparable by
 - (1) radical high-temperature polymerization of
 - (m1) at least one methacrylate and
 - (m2) at least one monomer copolymerizable therewith, with
 - (m3) from 5.0 to 50 mol% of the total amount of monomers (m1) and (m2) being monomers which carry nonpolymerizable reactive functional groups (b); and
 - (2) polymer-analogous reaction of the resulting methacrylate copolymer, which carries at least one reactive functional group (b), with
 - (m4) at least one compound containing at least one bond which can be activated with actinic radiation and at least one reactive functional group (c) which is complementary to the group (b),

CLAIMS AS FILED - BASF/NAE 1032/99

to give the group (a).

3. The solid composition as claimed in claim 1, characterized in that the bonds which can be activated with actinic radiation comprise carbon-hydrogen single bonds or carbon-carbon, carbon-oxygen, carbon -nitrogen, carbon-phosphorus or carbon-silicon single bonds or double bonds, especially carbon-carbon double bonds.
4. The solid composition as claimed in claim 1, characterized in that the groups (a) are selected from the group containing (meth)acrylate, ethacrylate, crotonate, cinnamate, vinyl ether, vinyl ester, dicyclopentadienyl, norbornenyl, isoprenyl, isopropenyl, allyl and butenyl groups; dicyclopentadienyl ether, norbornenyl ether, isoprenyl ether, isopropenyl ether, allyl ether or butenyl ether groups, and dicyclopentadienyl ester, norbornenyl ester, isoprenyl ester, isopropenyl ester, allyl ester and butenyl ester groups.
5. The solid composition as claimed in claim 4, characterized in that the groups (a) are (meth)acrylate groups, especially acrylate groups.
6. The solid composition as claimed in claim 1, characterized in that, based on its overall weight, it contains from 5.0 to 95% by weight of the (meth)acrylate copolymer (A) and from 95 to 5.0% by weight of the compound (B).
7. The solid composition as claimed in claim 1, characterized in that the groups (a) in the compound (B) are attached to the parent structure by way of urethane, ester, ether and/or amide groups.
8. The solid composition as claimed in claim 7, characterized in that the groups (a) in the compound (B) are attached to the parent structure by way of urethane

CLAIMS AS FILED - BASF/NAE 1032/99

groups.

9. The solid composition as claimed in claim 1, characterized in that the compound (B) is amorphous, partly crystalline, or crystalline.
10. The solid composition as claimed in claim 1, characterized in that the compound (B) has a melting range or melting point in the temperature range from 40 to 130°C.
11. The solid composition as claimed in claim 1, characterized in that the compound (B) has a melt viscosity at 130°C of from 50 to 20 000 mPas.
12. The solid composition as claimed in claim 1, characterized in that the parent structure of the compound (B) is of low molecular mass, oligomeric and/or polymeric.
13. The solid composition as claimed in claim 12, characterized in that the oligomeric and/or polymeric parent structure of the compound (B) contains olefinically unsaturated double bonds.
14. The solid composition as claimed in claim 12, characterized in that the oligomeric and/or polymeric parent structure is derived from random, alternating and/or block, linear, branched, hyperbranched, dendrimeric and/or comb polyaddition resins, polycondensation resins and/or addition (co)polymers of ethylenically unsaturated monomers.
15. The solid composition as claimed in claim 14, characterized in that the addition (co)polymers are poly(meth)acrylates and/or partially hydrolyzed polyvinyl esters and the polyaddition resins and/or polycondensation resins are polyesters, alkyds, polyurethanes, polyester-polyurethanes, polylactones, polycarbonates,

CLAIMS AS FILED - BASF/NAE 1032/99

polyethers, polyether-polyesters, epoxy resinamine adducts, polyureas, polyamides or polyimides, especially polyesters, polyester-polyethers, polyurethanes, and polyester-polyurethanes.

16. The solid composition as claimed in claim 1, characterized in that the methacrylate copolymer (A) and/or the compound (B) comprise at least one chemically bonded stabilizer (e).
17. The solid composition as claimed in claim 16, characterized in that a HALS compound is used as chemically bonded stabilizer (e).
18. The solid composition as claimed in claim 17, characterized in that the 2,2,6,6-tetramethyl-piperidine-N-oxide-4-oxy groups is used as chemically bonded HALS compound (e).
19. The solid composition as claimed in claim 16, characterized in that the chemically bonded stabilizer (e) is present in the solid compound (B).
20. The solid composition as claimed in claim 1, characterized in that the compound (B) contains reactive functional groups (c) which are able to undergo thermal crosslinking reactions with groups (c) of its own kind and/or with complementary functional groups (b) which are also present in the methacrylate copolymer (A) and/or in at least one crosslinking agent.
21. The solid composition as claimed in claim 1, characterized in that the methacrylate copolymer (A) and/or the compound (B) comprises chemically bonded photoinitiators and/or photocoinitiators.
22. The use of the solid composition as claimed in claim 1 as coating materials, adhesives or sealing compounds which can be crosslinked thermally and/or with

CLAIMS AS FILED - BASF/NAE 1032/99

- actinic radiation, or to produce coating materials, adhesives or sealing compounds which can be crosslinked thermally and/or with actinic radiation.
23. Coating materials, adhesives or sealing compounds comprising at least solid compositions as claimed in claim 1.
24. The coating materials, adhesives or sealing compounds as claimed in claim 23, characterized in that at least one further constituent curable with actinic radiation is present therein.
25. The coating materials, adhesives or sealing compounds as claimed in claim 24, characterized in that the further constituent is selected from the group containing other (meth)acrylate-functional (meth)acrylic copolymers, polyether acrylates, polyester acrylates, unsaturated polyesters, epoxy acrylates, amino acrylates, melamine acrylates, silicone acrylates, and the corresponding methacrylates.
26. The coating materials, adhesives or sealing compounds as claimed in claim 25, characterized in that the unsaturated polyester is selected from the group containing amorphous, partly crystalline and crystalline solid polyesters containing at least one terminal group which derives from the adduct of dicyclopentadiene and maleic anhydride in a molar ratio of 1:1, and/or at least one endomethylenetetrahydrophthalic acid group.
27. The coating materials, adhesives or sealing compounds as claimed in claim 23, characterized in that at least one further additive is present therein.
28. The coating materials, adhesives or sealing compounds as claimed in claim 23, characterized in that they are present as powders, powder slurries, or a solution or dispersion in organic solvents.

CLAIMS AS FILED - BASF/NAE 1032/99

29. The use of the coating materials, adhesives or sealing compounds as claimed in claim 23 to produce coatings, adhesive films or seals for primed or unprimed substrates.
30. A process for producing coatings, adhesive films or seals for primed or unprimed substrates, wherein
- (1) at least one coating material and/or adhesive and/or at least one sealing compound as claimed in claim 23 in the form of
 - (1.1) a melt,
 - (1.2) a powder,
 - (1.3) a powder slurry or
 - (1.4) a dispersion or a solution in at least one organic solventis applied to the primed or unprimed substrate,
 - (2) the resulting powder slurry film (1.3) or the resulting film of a dispersion or a solution (1.4) is dried or the resulting film of the melt (1.1) is caused to solidify or is maintained in the melted state by heating,
 - (3) the resulting solid film (1.2), (1.3) or (1.4) is melted by heating, and
 - (4) the melted film which results in process step (2) or (3),
 - (4.1) in the melted state,
 - (4.2) on solidification and/or
 - (4.3) after solidification,is cured with actinic radiation.
31. The process as claimed in claim 30, characterized in that the film is thermally

CLAIMS AS FILED - BASF/NAE 1032/99

cured by heating before, during or after process step (4).

32. The process as claimed in claim 30, characterized in that heating is carried out with near infrared (NIR) light.
33. Coatings, adhesive films or seals on primed or unprimed substrates, by the process as claimed in claim 30.
34. Primed and unprimed substrates, especially bodies of automobiles and commercial vehicles, industrial components, including plastics parts, packaging, coils and electrical components, or furniture, comprising at least one coating, at least one adhesive film and/or at least one seal as claimed in claim 33.

32. The process as claimed in claim 30, characterized in that heating is carried out with near infrared (NIR) light.

33. Coatings, adhesive films or seals on primed or unprimed substrates, by the process as claimed in claim 30.

34. Primed and unprimed substrates, especially bodies of automobiles and commercial vehicles, industrial components, including plastics parts, packaging, coils and electrical components, or furniture, comprising at least one coating, at least one adhesive film and/or at least one seal as claimed in claim 33.